

RESPONSE

Support

Applicants have amended claim 1 to specify that the fuel composition may optionally comprise a mineral oil fluidizer at 0.3 to 1000 ppm by weight. Support for this amendment is found on page 13, line 17 and page 16, lines 20-23 of the specification.

Applicants have amended claim 1 to specify that component (B) comprises (i) a reaction product of a chlorinated polyisobutylene, a polyamine and a base; or (ii) a di-hydroxyalkyl-substituted fatty amine. Applicants have also amended claims 5 and 9 to make them consistent with claim 1. Support for these amendments is found on page 8, line 21 to page 9, line 25 of the specification.

Claim 15 has been cancelled.

Applicants have added new claim 16, which is identical to claim 1, as currently amended, except that component (C) is no longer listed as an optional component and the amendments to claim 1 described above regarding component (B) are not present. Support for this amendment is found in claim 1 as filed as well as the specification.

No other elements of the claims have been amended.

Response

The Examiner rejected claims 1, 5, 7-9 and 12-15 under 35 U.S.C. 103(a) as being unpatentable over Forde et al (US 6,136,051) in combination with Nakazato et al (US 6,569,818). Applicants respectfully disagree.

The Examiner notes in the rejection that Applicants' claims allow for the addition of other additives, including the mineral carrier fluid of Forde. Applicants have amended their claims to specify that any mineral oil fluidizer, which may optionally be present, may only be present from 0.3 to 1000 ppm by weight in the fuel composition.

In contrast, Forde teaches that its fuel composition must contain at least 2400 ppm by weight mineral carrier fluid (see the Abstract; col 1, lines 64-66; and col 5, lines 8-15 of Forde). Forde defines its carrier fluid as nonvolatile lubricating mineral oil added to as a carrier for its detergent and to assist in removing and preventing deposits. Forde is clear that its gasoline compositions require at least 2400 ppm by weight of carrier fluid and Forde provides no teaching or indication that any lower amount may be used and in fact clearly indicates that compositions with lower amounts of carrier fluid are not included in its teachings.

The present claims specify that a mineral oil carrier fluid may be present as an optional component in the fuel compositions used by the claims methods, but only in the range of 0.3 to 1000 ppm by weight. This feature is not taught by any of the references cited and therefore, Applicants respectfully request that the current rejections based on Forde be removed.

The Examiner rejected claims 1, 3, 5, 7-10 and 12-15 under 35 U.S.C. 103(a) as being unpatentable over Moreton et al (US 6,514,297) in combination with Bovington et al (US 6,720,293) and Koganci et al (US 6,329,328). Applicants respectfully disagree.

Applicants have amended the claims to specify that component (B) contains: (i) a reaction product of a chlorinated polyisobutylene, a polyamine and a base; or (ii) a di-hydroxyalkyl-substituted fatty amine; or (iii) combination thereof. Therefore, the current claims specify the presence of: (A) a reaction product of a 150 to 5000 number average molecular weight polyisobutenylsuccinic acylating agent and a polyethylenepolyamine and/or (B)(i) a reaction product of a chlorinated polyisobutylene, a polyamine and a base and/or (B)(ii) a di-hydroxyalkyl-substituted fatty amine. None of these detergents are taught by Moreton.

The Examiner notes that Moreton teaches Mannich reaction products, but concedes that the present invention requires the presence of component (A) and/or (B), while component (C), Applicants' Mannich component, is an optional component. The Examiner refers to col 4, lines 37-51 of Moreton, where the references indicates that an additional dispersant, such as a PiB polyamine, may be present in its fuel compositions. Moreton provides no other teaching of this PiB polyamine.

Applicants respectfully submit that neither component (A) nor (B) of the present invention are taught by Moreton, or any of the other references cited in this set of rejections. Therefore, Applicants request that the rejection based on Moreton be removed and the claims be allowed.

Applicants have also added new claim 16, which specifies a method of operating an internal combustion engine, using a nitrogen-containing detergent composition comprising: (A) a reaction product of a 150 to 5000 number average molecular weight polyisobutenylsuccinic acylating agent and a polyethylenepolyamine; (B) a hydrocarbyl-substituted amine; or combinations thereof, and optionally further comprising: (D) a high molecular weight polyetheramine. This claim includes the feature of an optional mineral oil fluidizer,

as discussed above, and therefore no rejections based on Forde should be made. This claim does not include optional component (C), the Mannich component discussed above, and therefore no rejections based on Moreton should be made.

Conclusion.

For the foregoing reasons it is submitted that the present claims are novel and unobvious over the cited references, and in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Any required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,

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